

What is claimed is:

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a-17  
1 1. A recording apparatus, comprising:

2 reception means for receiving one broadcast signal,  
3 out of a plurality of broadcast signals, each broadcast  
4 signal being specified using a condition, the condition  
5 including a broadcast frequency and at least one other  
6 item; and

7 recording means for recording

8 (1) the broadcast signal received by the reception  
9 means, and

10 (2) broadcast ID information that is based on a channel  
11 number and other information and enables the received  
12 broadcast signal to be identified out of the plurality  
13 of broadcast signals,

14 on a recording medium in an interrelated manner.

1 2. A recording apparatus according to Claim 1,

2 wherein the broadcast ID information recorded by the  
3 recording means includes broadcast station ID information  
4 that (a) enables a broadcast station that broadcast the  
5 interrelated broadcast signal to be identified out of a  
6 plurality of broadcast stations that broadcast the  
7 plurality of broadcast signals and (b) is specified based  
8 on the channel number and the other information.



1 5. A recording apparatus according to Claim 4,  
2 wherein the other information is area classification  
3 information that enables an area in which the reception  
4 means is located to be distinguished from a plurality of  
5 other areas.

1 6. A recording apparatus according to Claim 5,  
2 wherein the recording means treats parts of the  
3 broadcast signal received by the reception means during  
4 certain periods as programs, specifies broadcast station  
5 ID information separately for each program, and records  
6 each program and corresponding broadcast ID information  
7 on the recording medium in an interrelated manner.

1 7. A recording apparatus according to Claim 6,  
2 wherein the recording means records the broadcast  
3 ID information of the program in an attribute area on the  
4 recording medium,

5 the attribute area is linked to an area on the  
6 recording medium in which the program corresponding to  
7 the broadcast ID information is recorded, and

8 the recorded broadcast ID information is paired with  
9 a data application ID showing an application format for  
0 data and is recorded with a data construction that conforms  
1 with the application format shown by the data application  
2 ID.

1 8. A recording apparatus according to Claim 7,

2 wherein the recording means

3 (1) is capable of recording broadcast ID  
4 information with any of a plurality of data constructions  
5 that conform with a plurality of application formats,

6 (2) selects an application format, out of the  
7 plurality of application formats, in accordance with a  
8 data application ID that is already recorded on the  
9 recording medium, and

10 (3) records the broadcast ID information with  
11 a data construction that conforms with the selected  
12 application format.

1 9. A recording apparatus according to Claim 5,

2 wherein the recording means includes an area  
3 classification information reception unit for receiving  
4 an input of area classification information from the user,  
5 and

6 the recording means specifies, based on the broadcast  
7 station correspondence table, broadcast station ID  
8 information from the area classification information  
9 received by the area classification information reception  
0 unit and the broadcast channel number, and records  
1 broadcast ID information including the specified broadcast  
2 station ID information on the recording medium in an  
3 interrelated manner with the broadcast signal received

14 by the tuner.

1 10. A recording apparatus according to Claim 5, further  
2 comprising:

3 broadcast station correspondence table obtaining  
4 means for obtaining a broadcast station correspondence  
5 table from another apparatus via a communication path,  
6 and storing the obtained broadcast station correspondence  
7 table in the broadcast station correspondence table storage  
8 means.

1 11. A recording apparatus according to Claim 3,  
2 wherein the broadcast ID information includes a  
3 broadcast channel number as well as broadcast station ID  
4 information, and

5 the recording means records broadcast ID information  
6 including the broadcast channel number received by the  
7 broadcast channel number reception unit on the recording  
8 medium in an interrelated manner with a broadcast signal  
9 that the tuner receives in accordance with the broadcast  
10 channel number.

1 12. A recording apparatus according to Claim 2,  
2 wherein the recording means records the broadcast  
3 ID information as a pair with a data application ID showing  
4 an application format for data, the broadcast ID

5 information being recorded with a data construction that  
6 conforms with the application format shown by the data  
7 application ID.

1 13. A recording apparatus according to Claim 2,  
2 wherein the recording means treats parts of the  
3 broadcast signal received by the reception means during  
4 certain periods as programs, specifies broadcast station  
5 ID information separately for each program, and records  
6 each program and corresponding broadcast ID information  
7 on the recording medium in an interrelated manner.

1 14. A recording apparatus according to Claim 13,  
2 wherein the recording means records the broadcast  
3 ID information of the program in an attribute area on the  
4 recording medium,

5 the attribute area is linked to an area on the  
6 recording medium in which the program corresponding to  
7 the broadcast ID information is recorded, and  
8 the recorded broadcast ID information is paired with  
9 a data application ID showing an application format for  
10 data and is recorded with a data construction that conforms  
11 with the application format shown by the data application  
12 ID.

1 15. A recording apparatus according to Claim 2,  
2 wherein the recording means

3 (1) is capable of recording broadcast ID  
4 information with any of a plurality of data constructions  
5 that conform with a plurality of application formats,

6 (2) selects an application format, out of the  
7 plurality of application formats, in accordance with a  
8 data application ID that is already recorded on the  
9 recording medium, and

10 (3) records the broadcast ID information with  
11 a data construction that conforms with the selected  
12 application format.

1 16. A recording apparatus according to Claim 2,

2 wherein the recording medium is removable,

3 the recording means includes a medium loading unit  
4 operable to load the recording medium, and

5 the recording means records the broadcast signal  
6 received by the reception means and the broadcast ID  
7 information in an interrelated manner on the recording  
8 medium loaded by the medium loading unit.

1 17. A recording apparatus according to Claim 2,

2 wherein the channel number is an operation channel  
3 number that is used by the user when selecting a channel,

4 the recording apparatus comprising:

5 operation channel number reception means for  
6 receiving an input of an operation channel number by a  
7 user; and

8 channel correspondence table storage means for  
9 storing a channel correspondence table that associates  
10 operation channel numbers with broadcast channel numbers  
11 that correspond to broadcast frequencies, and

12 the reception means

13 (1) including a tuner,

14 (2) specifying, based on the channel correspondence  
15 table, a broadcast channel number corresponding to the  
16 operation channel number received by the operation channel  
17 number reception means, and

18 (3) receiving, via the tuner, a broadcast signal  
19 broadcast on a broadcast frequency corresponding to the  
20 specified broadcast channel number.

1 18. A recording apparatus according to Claim 2, further  
2 comprising a broadcast selection reception means for  
3 presenting, to a user, broadcast ID information for the  
4 plurality of broadcast signals that can be received by  
5 the reception means and receiving a selection of broadcast  
6 ID information for one broadcast signal from a user,

7 the reception means including a tuner, and receiving,  
8 via the tuner, a broadcast signal broadcast on a broadcast  
9 frequency determined based on the broadcast ID information



10 of the selection received by the broadcast selection  
11 reception means.

1 19. A recording apparatus according to Claim 2,  
2 wherein the broadcast ID information is broadcast  
3 having been multiplexed with the corresponding broadcast  
4 signal,

5 the reception means includes a separating unit for  
6 separating the broadcast ID information from the received  
7 broadcast signal, and

8 the recording means records the broadcast signal  
9 received by the reception means on the recording medium  
10 as a separate file that is interrelated with the broadcast  
11 ID information separated by the separating unit.

1 20. A recording apparatus according to Claim 2,  
2 wherein the broadcast station ID information  
3 includes character string data showing a name of a broadcast  
4 station.

1 21. A recording apparatus according to Claim 1,  
2 wherein the channel number is a broadcast channel  
3 number corresponding to a single broadcast frequency,  
4 the other information is area classification  
5 information that enables an area in which the reception  
6 means is located to be distinguished from a plurality of

7 other areas,

8 the recording means records the broadcast signal  
9 received by the reception means onto the recording medium  
10 in an interrelated manner with broadcast ID information  
11 composed of the area classification information and the  
12 broadcast channel number corresponding to a broadcasting  
13 frequency on which the broadcast signal is received.

1 22. A recording apparatus corresponding to Claim 1,  
2 wherein the recording medium is a rewritable optical  
3 disc, and

4 the recording means records data onto the recording  
5 medium in conformity with DVD Video Recording Standard,  
6 treats a part of the broadcast signal received by the  
7 reception means during a certain period as a program, and  
8 records the program and the broadcast ID information on  
9 the recording medium,

10 the broadcast ID information being recorded into an  
11 IT\_TXT area that is in a management information file on  
12 the optical disc and is linked to a recording area for  
13 the recorded program, and

14 the broadcast ID information being recorded in  
15 accordance with a data application format that is shown  
16 by a data application ID recorded together with the  
17 broadcast ID information, in a text field that is appended  
18 with an IDCD value "0x90".

1 23. A playback apparatus that plays back a program recorded  
2 on a recording medium,

3 the recording medium storing a program and broadcast  
4 ID information for the program in an interrelated manner,  
5 a program being a part of a broadcast signal during  
6 a certain period,

7 the broadcast ID information (1) identifying the  
8 broadcast signal, out of a plurality of broadcast signals  
9 that can be specified by a condition composed of a broadcast  
10 frequency and at least one other item, on which the program  
11 was received, and (2) being based on the broadcast frequency  
12 and other information,

13 the playback apparatus comprising:

14 reading means for reading a program and at least part  
15 of the broadcast ID information related to the program;

16 display means for displaying at least part of the  
17 broadcast ID information read by the reading means; and

18 playback means for playing back the program read by  
19 the reading means.

1 24. A playback apparatus according to Claim 23,

2 wherein the broadcast ID information includes  
3 broadcast station ID information that (a) identifies a  
4 broadcast station that broadcast a broadcast signal for  
5 the interrelated program on the recording medium out of  
6 a plurality of broadcast stations that broadcast the

7 plurality of broadcast signals and (b) is specified based  
8 on a channel number and other information,

9 the reading means reads the broadcast station ID  
10 information from the recording medium, and

11 the display means displays the broadcast station ID  
12 information read by the reading means.

1 25. A playback apparatus according to Claim 24,

2 wherein the recording medium stores a plurality of  
3 pairs, each composed of a program and corresponding piece  
4 of broadcast ID information,

5 the reading means reads a plurality of pieces of  
6 broadcast ID information from the recording medium, and

7 the display means displays the plurality of pieces  
8 of broadcast ID information read by the reading means.

1 26. A playback apparatus according to Claim 25,

2 wherein the broadcast ID information for a program  
3 is recorded on the recording medium

4 (1) with a data application ID showing an application  
5 format for data as a pair,

6 (2) in an attribute area that is linked to a recording  
7 area of the corresponding program, and

8 (3) in a data format that conforms with the application  
9 format shown by the data application ID, and

10 the reading means judges whether pieces of broadcast

11 ID information on the recording medium are paired with  
12 a data application ID that matches a predetermined value,  
13 and reads the broadcast station ID information only from  
14 pieces of broadcast ID information that are paired with  
15 a matching data application ID.

1 27. A playback apparatus according to Claim 24,  
2 wherein in addition to broadcast station ID  
3 information, each set of broadcast ID information on the  
4 recording medium includes a broadcast channel number  
5 corresponding to a broadcast frequency on which the program  
6 corresponding to broadcast ID information was broadcast,  
7 the reading means reads a broadcast station ID  
8 information and a broadcast channel number from a piece  
9 of broadcast ID information, and  
10 the display means displays the broadcast station ID  
11 information and broadcast channel number read by the  
12 reading means.

1 28. A playback apparatus according to Claim 24,  
2 wherein the recording medium is removable,  
3 the reading means includes a medium loading unit  
4 operable to load the recording medium, and  
5 the reading means reads the broadcast station ID  
6 information from the recording medium loaded by the medium  
7 loading unit.

29. A playback apparatus according to Claim 24,  
wherein the broadcast station ID information  
includes character string data showing a name of a broadcast  
station, and  
the display means displays the character string data.

30. A playback apparatus according to Claim 24,  
wherein the recording medium is a rewritable optical disc,  
wherein the program and management information, including an IT\_TXT area that is linked to an area in which the program is recorded on the optical disc, are recorded in conformity with DVD Video Recording Standard,  
the broadcast ID information of the program is recorded in an IT\_TXT area in accordance with a data application format that is shown by a data application ID recorded together with the broadcast ID information, in a text field that is appended with an IDCD value "0x90", and  
the reading means judges whether a data application ID that is paired with the broadcast ID information, including the broadcast station ID information, matches a predetermined value, and reads the broadcast station ID information only when the data application ID matches the predetermined value.

1 31. A playback apparatus according to Claim 30,  
2 wherein the management information includes a  
3 LAST\_MNF\_ID area, and  
4 the reading means judges whether a predetermined  
5 value is stored at a predetermined position in the  
6 LAST\_MNF\_ID area and suppresses reading of the broadcast  
7 station ID information when the predetermined value is  
8 not stored.

1 32. A playback apparatus according to Claim 24, further  
2 comprising:

3 broadcast channel number receiving means for  
4 receiving an input of a broadcast channel number  
5 corresponding to a broadcast frequency from a user;

6 receiving means for receiving a broadcast signal  
7 broadcast on the broadcast frequency corresponding to the  
8 broadcast channel number received by the broadcast channel  
9 number receiving means; and

10 broadcast station correspondence table storing means  
11 for storing a broadcast station correspondence table that  
12 associates each broadcast channel number with broadcast  
13 station ID information for identifying a broadcast station  
14 that broadcasts a broadcast signal that can be received  
15 by the reception means,

16 the display means searching for pieces of broadcast  
17 station ID information read by the reading means in the

18 broadcast station correspondence table and displaying a  
19 broadcast channel number corresponding to each piece of  
20 broadcast station ID information found in the broadcast  
21 station correspondence table.

1 33. A playback apparatus according to Claim 32, further  
2 comprising:

3 operation channel number reception means for  
4 receiving an input of an operation channel number from  
5 a user; and

6 channel correspondence table storage means for  
7 storing a channel correspondence table that associates  
8 each operation channel number with a broadcast channel  
9 number,

10 wherein the receiving means specifies, based on the  
11 channel correspondence table, a broadcast channel number  
12 corresponding to the operation channel number received  
13 by the operation channel number reception means, and  
14 receives a broadcast signal broadcast on a broadcast  
15 frequency corresponding to the specified broadcast channel  
16 number, and

17 the display means converts, based on the channel  
18 correspondence table, the broadcast channel number  
19 corresponding to the broadcast ID information to an  
20 operation channel number and displays the operation channel  
21 number.





1 36. A recording apparatus according to Claim 35,  
 2 wherein the program recording means records the  
 3 program onto the recording medium with a certain bitrate,  
 4 and

5 the program attribute recording means records  
 6 recording mode information showing either the bitrate or  
 7 a control method for determining the bitrate onto the  
 8 recording medium as the attribute information showing the  
 9 attributes of the program.

1 37. A recording apparatus according to Claim 35,  
 2 wherein the program attribute recording means  
 3 records the data application ID in a last recording  
 4 apparatus information area, the predetermined standard  
 5 dictating that a recording apparatus that records data  
 6 also records apparatus information in the last recording  
 7 apparatus information area.

1 38. A playback apparatus for playing back a program that  
 2 is recorded on a recording medium,  
 3 the recording medium storing  
 4 (1) a program  
 5 (2) program-related information, which  
 6 (a) is linked to an area in which the program is  
 7 recorded,  
 8 (b) has a data construction that is defined by a

9 predetermined standard, and

10 (c) includes attribute information, which shows  
11 attributes of the program and is not defined by the  
12 predetermined standard,

13 the attribute information having a data construction  
14 that conforms with an application format, and

15 the application format being shown by a data  
16 application ID that is recorded as a pair with the attribute  
17 information,

18 the playback apparatus comprising:

19 reading means for reading the program and attribute  
20 information;

21 display means for displaying the attribute  
22 information read by the reading means; and

23 playback means for playing back the program read by  
24 the reading means.

1 39. A playback apparatus according to Claim 38,

2 wherein the attribute information is recording mode  
3 information showing either a bitrate used to record the  
4 program or a control method for determining the bitrate,  
5 and

6 the display means displays information showing the  
7 bitrate or control method used for the bitrate based on  
8 the recording mode information read by the reading means.

1 40. A playback apparatus according to Claim 38,  
2 wherein the recording medium includes a last  
3 recording apparatus information area into which a recording  
4 apparatus that records data must, according to the  
5 predetermined standard, also record apparatus information,  
6 and

7 the reading means judges whether the data application  
8 ID is recorded in the last recording apparatus information  
9 area, and only reads the attribute information on judging  
10 that the data application ID is recorded.

1 41. A data recording medium that records a program which  
2 is a part of a broadcast signal during a certain period,  
3 comprising:

4 a program recording area in which a program is  
5 recorded; and

6 a program attribute recording area, which is linked  
7 to the program recording area and in which broadcast ID  
8 information is recorded.

9 the broadcast ID information enabling a broadcast  
10 signal for the program to be identified out of a plurality  
11 of broadcast signals that are specified by conditions  
12 composed of broadcast frequencies and at least one other  
13 item and

14 the broadcast ID information being based on the  
15 broadcast frequency and other information.

1 42. A data recording medium on which a program is recorded,  
2 comprising:

3 a program recording area in which a program is  
4 recorded; and

5 a program attribute recording area, which is linked  
6 to the program recording area and in which attribute  
7 information showing attributes of the program is recorded  
8 with a data construction that conforms with a data  
9 application format shown by a data application ID recorded  
10 with the attribute information as a pair.

1 43. A recording method for recording a broadcast signal  
2 onto a recording medium, comprising:

3 a reception step for receiving a broadcast signal,  
4 out of a plurality of broadcast signals, that is specified  
5 using a condition, the condition including a broadcast  
6 frequency and at least one other item; and

7 a recording step for recording

8 (1) the broadcast signal received by the reception  
9 step, and

10 (2) broadcast ID information that is based on a channel  
11 number and other information and enables the received  
12 broadcast signal to be identified out of a plurality of  
13 broadcast signals,

14 on a recording medium in an interrelated manner.

1 44. A playback method that plays back a program recorded  
2 on a recording medium,

3           the recording medium storing a program and broadcast  
4 ID information for the program in an interrelated manner,  
5           a program being a part of a broadcast signal during  
6 a certain period,

7 the broadcast ID information (1) specifying the  
8 broadcast signal, out of a plurality of broadcast signals  
9 that can be specified by a condition composed of a broadcast  
10 frequency and at least one other item, on which the program  
11 was received, and (2) being based on the broadcast frequency  
12 and other information,

13 the playback method comprising:

14 a reading step for reading a program and at least  
15 part of the broadcast ID information related to the program;

16 a display step for displaying at least part of the  
17 broadcast ID information read by the reading step; and

18           a playback step for playing back the program read  
19 by the reading step.

1 45. A recording method for recording a broadcast signal  
2 onto a recording medium, comprising:

3 a reception step for receiving a broadcast signal;

4 a program recording step for recording a program which

5 is a part of a broadcast signal received by the reception

6 step during a certain period, on a recording medium; and

7 a program attribute recording step for recording  
8 program-related information, which is linked to an area  
9 in which the program is recorded, with a data construction  
10 that is defined by a predetermined standard, and recording  
11 attribute information, which shows attributes of the  
12 program and is not defined by the predetermined standard,  
13 in the program-related information with a data construction  
14 that conforms with an application format, the application  
15 format being shown by a data application ID that the program  
16 attribute recording step records as a pair with the  
17 attribute information.

1 46. A playback method for playing back a program that is  
2 recorded on a recording medium,

3 the recording medium storing

4 (1) a program

5 (2) program-related information, which

6 (a) is linked to an area in which the program is  
7 recorded,

8 (b) has a data construction that is defined by a  
9 predetermined standard, and

10 (c) includes attribute information, which shows  
11 attributes of the program and is not defined by the  
12 predetermined standard,

13 the attribute information having a data construction  
14 that conforms with an application format, and

15 the application format being shown by a data  
16 application ID that is recorded as a pair with the attribute  
17 information,  
18 the playback method comprising:  
19 a reading step for reading the program and attribute  
20 information;  
21 a display step for displaying the attribute  
22 information read by the reading step; and  
23 a playback step for playing back the program read  
24 by the reading step.

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